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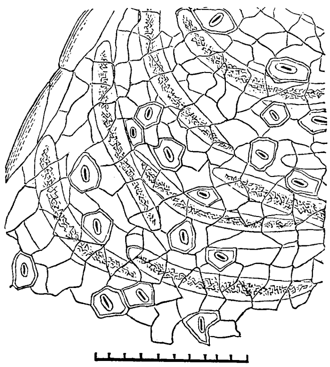
crystal—the cystolith—so called because the aggregation of crystals is inclosed in a capsule or cyst within a special cell, and is, moreover, connected with its cell by means of a delicate filament, differing in *this* particular from *all other* cell-contents.

In our common nettle (*Urtica*) we meet with the ordinary form of cystolith. A simple aggregation of minute crystals—probably oxalate of lime—nearly circular in form, showing the capsule plainly which envelops them, and also the special cell containing the cystolith. About six hundred fill a line an inch long, and four hundred are found in one square inch. Each cystolith contains about one hundred individual crystals. At lowest estimate, therefore, forty thousand crystals exist in one square inch of nettle leaf.



1000th of an inch.

In *Pilea muscosa*—a near ally of *Urtica*—I find a type of cystolith differing widely from all forms heretofore described. They are elongated and bent, in form, like an Australian boomerang. They lie in cells measuring only the $\frac{1}{70}$ of an inch long, and the $\frac{1}{650}$ wide; and so abundant that quite one-third of the entire leaf is occupied with them. Cystoliths of this magnitude and singular form I believe to be unknown to botanists. The filament connecting each one with its cell-wall is apparent.

What is the significance of these plant-crystals?—and there are others more numerous and more beautiful—what their office in the life of the plant? what part do they act in supplying the salts of lime, potash, and soda to the tissues of animals? Will scientific agriculture answer?

The death of Thomas Sparks was announced.

OCTOBER 20.

The President, Dr. RUSCHENBERGER, in the chair.

Twenty-four members present.

Abies concolor in Colorado.—Mr. THOMAS MEEHAN announced the discovery of *Abies* (*Picea* of Loudon) *concolor* in Glen Eyrie, near Pike's Peak, in Colorado, by Dr. Engelmann. When, however, he explored what was till then an unknown cañon in 1871, and which by right of a first discovery he had named Cañon

Engelmann, after his distinguished friend, and which name it still retains, he found a considerable quantity in that cañon also. He was attracted by the light green cones, as distinguished from the purplish ones of *Abies grandis*, but on climbing the trees, and examining the characters, he concluded it was but a variation from *A. grandis*, similar to what he was already familiar with in *A. balsamea*. Prof. Porter had also found it in Cheyenne Cañon in 1872; and, if really distinct from *A. grandis*, it is probably much more widely diffused through the Rocky Mountains than has been supposed.

Fertilization of Gentiana.—Mr. THOMAS MEEHAN called attention to the fact that the autumn-blooming gentians were now in flower; and a close investigation promised an interesting field to the botanist. They belonged to the class with gelatinous pollen, and which was now believed to require the aid of insects in fertilization; but many of our species had closed corollas, which seemed to make fertilization by this agency difficult. In connection with this subject he said Dr. Engelman had made some curious observations on the gentians of the Rocky Mountains. All the large flowered species (as *Gentiana affinis*, *G. frigida*, *G. Parryi*, etc.) have the anthers definitely fixed, and open outwards towards the corolla; while those of the smaller species (such as *G. acuta*, and neighboring genera, *Swertia and Pleurogyne*) have the face of the anthers directed towards the ovary at an early stage of development, but, on expansion of the corolla, are thrown over the filament, and then face outwards as the others. The stigma is cloven, but the lobes do not expand till several hours after the anthers have shed their pollen. Mr. Meehan finds the anthers of the large flowered eastern species accord with Dr. Engelman's observations on the Colorado ones, in having the anthers fixed from the first outwardly, at least in all that he has been able to examine.

Variations in Leaves of Ailanthus glandulosa.—Some leaflets gathered from the trees by Dr. H. Leffman were exhibited, in which the usual lanceolate form was departed from, and a triangularly hastate, or aceriform shape, assumed.

Note on Dryocampa.—Prof. LEIDY stated that the oaks in the forests of New Jersey, during the last summer, were greatly devastated by the Dryocampa senatoria. In the early part of September, in passing along the edge of a forest skirting a cranberry swamp, at Absecom, New Jersey, he had observed multitudes of the Dryocampa lying dead on the swamp and all bristling with the singular fungus Achlya prolifera.

The death of M. Elie de Beaumont, a correspondent of the Academy, was announced.